

# ***Mount Shasta Bioregional Ecology Center***

PO Box 1143 • Mount Shasta CA 96067 • Phone-fax 530 926-5655  
• email [shastamedicine@snowcrest.net](mailto:shastamedicine@snowcrest.net)

September 7, 2006

Via e-mail and hard copy with attachments

Mr. James C. Pedri, Assistant Executive Officer  
Attention: Mr. Jim Rohrbach  
Central Valley Regional Water Quality Control Board  
415 Knollcrest Drive, Suite 100  
Redding, California 96002

**Re: Waste Discharge Requirements** (including the Monitoring and Reporting Program) for Calpine Siskiyou Geothermal Partners, L.P., and CPN Telephone Flat, Inc., and the U.S. Department of Agriculture, Forest Service and U.S. Department of Interior, Bureau of Land Management Glass Mountain Exploration and Development Projects, Siskiyou County

Dear Mr. Pedri, Mr. Rohrbach, and Members of the Board:

We hereby timely submit the following comments on the above-named proposed permit for the September 21/22 2006 Board meeting by the September 8, 2006 deadline as outlined in the August 8, 2006 Notice.<sup>1</sup> The WDR has been revised since the May 4, 2006 Board meeting. However, our concerns still stand from all of our previously submitted comments, herein included by reference.<sup>2</sup> In the Notice of 8 August 2006, we were requested to comment on *four areas: financial assurance, use of steel tanks for containment of acidified geothermal fluids, placement of monitoring wells, and elimination of possible use of subgrade piping*. However, we believe that these four areas do not address other concerns that were raised by the Board in their closing discussions.<sup>3</sup>

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<sup>1</sup> This is the official written Notice given to the Mount Shasta Bioregional Ecology Center regarding the deadline submission of comments which we assume is legally binding and to which we are complying. We were on the cc w/enclosures.

<sup>2</sup> Previous comments were dated July 30, 2003; March 17, 2004; April 13, 2006; and April 24, 2006.

<sup>3</sup> We have reviewed the official transcripts by the Court Reporter for the May 4 2006 proceedings. Ms Mulholland stated: And I think that by allowing this continuance it gives us -- it gives me an option to sort of also figure out *what other things* we might do to make it a better situation. But in this case, I think it's necessary to get a better definition of what's happening in that caldron and what's happening -- what kinds of -- if there is a leak, what kind of impacts there would be or could be. We don't seem to have any of that defined, and so that's one thing. Mr. Hart said: And maybe we could figure out how to address that and some of the *other issues* that were raised today by the members of the public..." Dr Longley stated: But I think if you go back and look at a risk analysis right now, in my mind there's just a lot of impacts to groundwater that

As an additional bit of housekeeping, we did inform Staff that the tentative August 2006 copy of the WDR does not contain all strikeout text when we compared it with the May 2006 tentative WDR that we were given at the May Hearing. We understand that this may have resulted because of the many revisions to the WDR in 2006. However, one important omission from the August 2006 tentative WDR is the omission under the heading: **Discharge Prohibitions**: “The injection of acids or other Enhanced Geothermal Geothermal Systems (EGS) materials to well Nos. 85-33 or 64-27 is prohibited unless approved by BLM and/or EPA and the North Coast Water Board.” We ask that the Water Board reinstate the language under the heading **Discharge Prohibitions**. As we discussed with Staff on August 31, 2006 in the Redding office, this omission is significant as the North Coast Water Board has commented to Central Valley in 2003 on the acidization of wells in the North Coast jurisdiction and on the lack of environmental review of EGS/acidification.<sup>4</sup> Although the August 2006 tentative WDR prohibits the *injection* of geothermal fluids that have recently undergone acidification or EGS treatment to wells No. 85-37 and 64-27 in North Coast’s jurisdiction, this is *not* the same as prohibiting the injection of acids or EGS materials to these wells. (See that prohibition provision at No. 6 under the heading **Discharge Prohibitions**, August 2006 tentative WDR) The above-underlined language, which we are asking to be included into the WDR permit, is also an important aspect of the monitoring well placement program since only Section 28 in North Coast’s jurisdiction is eliminated from these tentative WDRs.

The tentative August 2006 copy of the WDR also contains new language in the permit in regards to the sump. (See Sections A. **Discharge Prohibitions** No. 7.; Section D. **Provisions** No. 11; **Discharge Specifications** No. 5); Monitoring and Reporting Program on leak testing. Please explain the rationale for including these revisions although the sump specification is not one of the four areas we have been asked to comment on. See August 8 2006 Notice to all concerned persons and agencies: “Any comments or recommendations you may have concerning *these four areas of possible revision* to the enclosed revised tentative WDRS should be submitted to this office by 8 September in

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I’m not sure that there --that -- that we have really considered all the factors that can take place in this -- in the very complicated geology we find in that particular caldron. Mr. Schneider: I’d like a little more time to look at the – and review the late revisions and -- you know, I just heard and need a little more time to make this decision.

<sup>4</sup> See North Coast Regional Water Quality Control Board (NCRWQCB) communications:

\*June 24, 2002 to Siskiyou County

\*June 11, 2003 to Central Valley on Calpine’s tentative 2003 WDR

\*2/13/02 e-mail with Calpine discussing doing the CEQA analysis on acidization in the summer of 2002

\*July 17 2002 Calpine request to NCRWQCB to modify permit WDID No. 1A99019RSIS to include acidization

\*August 8 2002 NCRWQCB’s response stating that the ‘EGS was *not* discussed in any of the CEQA documents prepared for the Project and hence potential impacts to water quality from use of this technique could not be evaluated’.

Note: all of these documents were submitted in MSBEC’s July 2003 comments/attachments except the July 17 2002 letter. However, this document was found in the Central Valley Water Board files.

order for us to give them full consideration prior to the meeting of the Central Valley Water Board on 21 or 22 September 2006.” We assume that it is appropriate to comment on the sump provisions and have included the following comments in regards to the sump monitoring. In 2003 Central Valley Water Board described their “intention to require the Discharger to submit metal analyses of the acids being used for well acidification and to sample the contents of the sump immediately after acid purging form [from] the well has taken place. If the contents of the sump are found to be “hazardous” the Discharger will be required to reinject immediately to a well approved by BLM and USEPA. Further discharges of hazardous waste to the sumps will be prohibited unless the sumps have been designed to contain these waste.”<sup>5</sup> Please explain if the tentative WDRs have incorporated these underlined monitoring provisions into the actual permit and/or monitoring plan for “prohibiting discharges of hazardous waste to sumps unless they have been designed to contain hazardous waste”. As we understand the current 2006 tentative WDR permit, it only contains language that would require the metal analysis, but the permit does not provide provisions that would prohibit waste if this analysis proved the materials to be hazardous. Without specific language in the permit that takes the “next step” after analyzing geothermal fluids that have recently undergone acidification, the pristine water resources at Medicine Lake have not been adequately and perhaps legally protected.

On another note of housekeeping in the August 2006 tentative WDRs, the inclusion of the statement “The Report of Waste Discharge was deemed complete on 11 April 2003” conflicts with a letter from Dennis Wilson, Central Valley Chief, North Regulatory Unit, to the Mount Shasta Bioregional Ecology Center. We refer Staff to their 3 June 2003 letter to us which stated that “On 11 April 2003 Jim Rohrbach sent a letter to Calpine deeming the report of waste discharge *incomplete* and requested additional information on the delivery and storage of acids to be used for well acidification.”<sup>6</sup> We are including this comment now about the conflicting date of completion of the Report of Waste Discharge (ROWD) because it was as highlighted in green as new information contained in the August 2006 tentative WDR.

On the last note of housekeeping, we are resending electronically all of our comprehensive attachments/enclosures of our July 2003 comments since they were not attached or found in any of the files at the Central Valley Water Board Redding office during our file review of August 31, 2006.<sup>7</sup> We will have also them available on a CD

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<sup>5</sup> See 25 March 2003 CVRWQCB letter to Janie Painter, SMLC

<sup>6</sup> The CVRWQCB June 3, 2003 letter to Calpine was submitted in MSBEC’s July 2003 comments/attachments and is part of the administrative record.

<sup>7</sup> Staff confirmed that it was possible that certain documents had been filed elsewhere and may not be easily available or found. We reviewed the files from the 1980’s to the present and also did not find the 1995 Report of Waste Discharge (ROWD) for the 1995 Glass Mountain Exploration Project or Calpine’s 2003 Application/ROWD for this proposed project. We had copied the latter document during a separate file review and note that there were ROWDs from other geothermal activities as early as the mid-80’s in the file, but not the 1995 or the 2003. We believe that the information in the ROWDs are significant in defining the geothermal operator’s plans and

for the Staff if desired. We want to assure that these documents of our July 30, 2003 comments are in the administrative record and available for all parties to review. These attachments/enclosures also are relevant to the four topics: financial assurance, use of steel tanks for containment of acidified geothermal fluids, placement of monitoring wells, and elimination of possible use of subgrade piping.

◆ ***Placement of Monitoring Wells – protection of the designated High Quality Waters of the State***

We appreciate timely receiving a copy of Calpine's June 1, 2006 rationale for groundwater monitoring that also specified design and placement of the required wells. We fully support the gathering of much needed-baseline information before *any further exploration or development activities occur*. This appears to be congruent with a letter by Central Valley Water Board to the Mount Shasta Bioregional Ecology Center in 1999.<sup>8</sup> Please see Dr. Curry's comments and recommendations on this technical issue.

The monitoring program is crucial since the proposed tentative WDRs are extremely broad in the scope of work they would allow for multiple projects covered in multiple exploration EA/IS environmental documents as well as the Telephone Flat Geothermal Development Project EIR/EIS. In addition to the three existing deep geothermal wells at Telephone Flat that were drilled over 15 years ago, there would be at least 15 deep *new* geothermal well *pads* with at least 2 new geothermal *wells* per pad in the Telephone Flat EIS/EIR (30 new geothermal wells) alone! As you are also aware, there are many miles of pipeline traversing the landscape between exploration wells 64-27 and 85-33 in North Coast's jurisdiction with those in the Telephone Flat Development lease area.

However, we have been informed by Staff that the *technical memo from the Water Board's professional geologist* will not be available until *after* the comment period deadline.<sup>9</sup> Similar to the issue of Financial Assurance described below, the public and our consultant have *not* had the opportunity to timely review and submit comments on this information. This information directly relates to one of the four issues-- placement of monitoring wells—that we are supposed to comment on by the September 8<sup>th</sup> deadline.

If we do not have sufficient time to review this information and to submit comments that are considered by the Water Board Staff and the Board, then we request a continuation of the Hearing to a later Board meeting date. We believe that it is extremely important and in the interest of the public and the water and cultural resources at Medicine Lake Highlands that we and our consultant are able to review and comment on this memo in a timely manner *prior* to any decisions on the placement of water monitoring wells that is brought before the Board.

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descriptions of any proposed acidization. We note that none of the other ROWDs, which were available, contained any mention of *acidization*.

<sup>8</sup> See October 15, 1999 letter to Mount Shasta Bioregional Ecology Center from James Pedri.

<sup>9</sup> We were informed that a copy would be forwarded to us in a August 17, 2006 Central Valley WB letter to our lawyer, Deborah Sivas, which is part of the administrative record.

As it stands, if we were to receive the memo early next week, we would have maybe 10 days to review it, comment on it, and for Staff and the Board to consider our comments. This seems extremely limited. It would also conflict with the August 8 2006 Public Notice that specifically says that “Comments submitted after 8 September 2006 will not be accepted or incorporated into the administrative record if doing so would prejudice any party.”<sup>10</sup>

We are willing to work with the parties in the monitoring plan with our consultant, Dr. Curry and are asking you for this extension in order to do so in an effective and meaningful way.<sup>11</sup>

◆ ***Financial assurance***

The Central Valley Water Board has rightfully requested financial assurance for these Designated High Quality Waters of the state. However, the financial assurance provisions are inadequate in the tentative WDRs.

We believe that the two “worse case scenarios” given are inaccurate as they do not present the potential common hazards associated with geothermal development—such as toxic spills, deep leakages, or well blow-outs—that would have devastating effects on water quality. Therefore the WDRS do not fully address the potential impacts to water quality, which the Water Board has jurisdiction to protect under the Porter Cologne Act. We refer Staff also to Dr. Curry’s comments that point to the risks involved with geothermal activities in this extremely sensitive environment.

Background:

On August 31, 2006 we reviewed all files available at the Redding Water Board office. We did not find any information on the financial amounts or any communications with Calpine on this issue other than the Water Board’s letter requesting this information 4 months ago. However, only two scenarios (that would require financial bonding) have been added *only* to the Information Sheet of the tentative August 2006 WDRs, not the actual permit provisions, since the May 2006 Hearing, which are: 1) Calpine is in the process of testing a well and has filled a geothermal fluids sump with geothermal fluid. At this point they abandon the project and a contractor must be hired to come to the site and pump the geothermal fluid in the sump to an injection well. 2) A leak develops in a geothermal fluids sump liner and must be repaired immediately.

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<sup>10</sup> The Public Hearing Notice of August 8, 2006 is not the same as the Notice of WDRs for Calpine Siskiyou Geothermal Partners, L.P., etc. The Public Hearing Notice also states that Persons, including Parties, wishing to comment on this noticed hearing item must submit testimony, evidence, and or comments (collectively “comments”) in writing to the Central Valley Water Board no later than 8 September 2006.

<sup>11</sup> We also note that we are awaiting a response to our August 29, 2006 Public Records Request for data that would assist our consultant in developing a monitoring plan for the placement of monitoring wells.

We note that these scenarios do not address several of the concerns that Staff requested Calpine to include in the Report: a) acid spills or leakage to ground surface or well pad during formation stimulation processes; b) leakage of geothermal fluid from transfer pipelines from sumps to injection wells (which may be due to rupture, equipment failure, or earthquake(s)).<sup>12</sup> See 21 April 2006 Central Valley WB letter to Calpine: **Guidance for submittal of Financial Assurance**. We note that the Guidance states that the Report is “*not necessarily limited to these above-named*” releases and are for “known or reasonably foreseeable releases arising from geothermal exploration and/or development of geothermal resources”.

Through no fault of the Water Board Staff, Calpine has not submitted this Report. This is extremely relevant, since one of four issues that we have been asked to comment on by September 8<sup>th</sup> is the financial issue. If we do not have sufficient time to review this Report and to submit comments that are considered, then we request a continuation of the Hearing to a later Board meeting date.<sup>13</sup> We believe that it is extremely important and in the interest of the public and the resources at Medicine Lake that we are able to review and comment on this Report in a timely manner *prior* to any decisions on the financial assurances. It would be unacceptable that Calpine submits this extremely important information at the September Board meeting or after the comment period deadline, which essentially would eliminate the public’s opportunity to adequately review and comment and would also eliminate the Board and Staff’s timely opportunity as well. It also conflict with the August 8 2006 Public Hearing Notice that specifically says that “Comments submitted *after* 8 September 2006 will not be accepted or incorporated into the administrative record if doing so would prejudice any party.”

We request that the Report a) include an analysis of all of the above-mentioned releases named by Central Valley WB in their April 21, 2006 letter; b) include an assessment of the clean-up of contamination of water resources, which are designated as High Quality Waters of the State; c) that the public has an opportunity to timely review and comment on the Report from Calpine *prior* to its being presented to the Board and *prior* to their any approval by the Board; d) that the Report would include the *detailed cost estimates* for financial assurance; and that e) all financial requirements (including the financial amounts) are clearly spelled out and written into the actual permit *provisions*.

- ◆ The ***Underground Piping*** has not been analyzed in any of the environmental review documents and we support the Water Board in its full elimination from the tentative WDRs. The potentially significant impacts to the environment, including but not limited to water resources and cultural resources; have not been disclosed, analyzed, or mitigated in any environmental document before the Board. All language should be stricken. As far as we are aware, there has also not been any Plan of Operation for underground piping submitted to the lead agencies, subgrade or otherwise.

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<sup>12</sup> See 21 April 2006 Central Valley Water Board letter to Calpine

<sup>13</sup> Clearly any comments we submitted would be *after* the comment period deadline and as such, we realize that the Water Board would also have insufficient time to consider our comments.

- ◆ The *use of steel tanks for containment of acidified geothermal fluids* does not appear in the tentative WDRs. So obviously we have no specific provisions to comment on within the permit. Although this was suggested as a possible alternative at the May Hearing, we are unaware of any of the environmental review documents before the Board which have disclosed, analyzed, or contained mitigations for the containment of acidified geothermal fluids in steel tanks and any potentially significant impacts to the environment, including but not limited to water, cultural, and biological resources; public health and safety. Lacking this environmental review, we can not comment on its usage.

We ask that these comments along with our all our previous comments, including our substantive July 2003 comments be included in the Water Board's packets and received by each member of the Board prior to the hearing, and that our comments be read in conjunction with those from our attorney Deborah Sivas of the Stanford Legal Clinics, and from our hydrogeology expert Dr. Robert Curry. We also incorporate by reference all comments submitted by the Pit River Tribe and the Save Medicine Lake Coalition.

Respectfully Submitted,  
Michelle Berditschevsky  
Michelle Berditschevsky  
Executive Director

Peggy Risch  
Peggy Risch  
Environmental Research Associate

Cc  
Deborah Sivas, esq.  
Dr. Robert Curry  
Pit River Tribe  
SMLC

#### References

**See Footnote 1** August 8, 2006 Notice of Tentative WDRs for Calpine Siskiyou Geothermal Partners  
**See Footnote 2** Transcripts of the May 2006 Board Hearing  
**See Footnote 3** North Coast Regional Water Quality Control Board communications: June 11, 2003 to Central Valley Water Board  
June 24, 2002 to CEQA lead agency, Siskiyou County Air Pollution Control District  
July 17, 2002 Calpine to North Coast  
August 8, 2002 to Calpine  
2/13/03 e-mail to Calpine  
**See Footnote 4** June 3, 2003 Central Valley Water Board Communication  
**See Footnote 5** March 25, 2003 Central Valley Water Board Communication  
**See Footnote 6** June 3, 2003 Central Valley Water Board Communication  
**See Footnote 8** October 15, 1999 Central Valley Water Board/ James Pedri  
**See Footnote 9** August 17, 2006 Central Valley Water Board to Sivas  
**See Footnote 10** August 8, 2006 Public Hearing Notice  
**See Footnote 11** August 29, 2006 Mount Shasta Bioregional Ecology Center PRA  
**See Footnote 12** April 21, 2006 Central Valley Water Board Communication to Calpine